

38. A rope of single-wall carbon nanotubes in accordance with claim 37 wherein the rope comprises 100 to 500 single-wall carbon nanotubes.

39. A rope of single-wall carbon nanotubes in accordance with claim 38 wherein the average diameter of all single-wall carbon nanotubes in the rope is  $13.8 \text{ \AA} \pm 0.3 \text{ \AA}$ .

40. A rope of single-wall carbon nanotubes in accordance with claim 38 wherein the average diameter of all single-wall carbon nanotubes in the rope is  $13.8 \text{ \AA} \pm 0.2 \text{ \AA}$ .

41. A rope in accordance with claim 40 wherein the 2-D triangular lattice constant is  $17 \text{ \AA}$ .

42. A rope of single-wall carbon nanotubes in accordance with claim 35 comprising about 100 to about 500 single-wall carbon nanotubes of which greater than 50% are single-wall carbon nanotubes of the armchair form.

43. A rope of single-wall carbon nanotubes in accordance with claim 42 wherein greater than 75% of the single-wall carbon nanotubes are of the armchair form.

44. A rope of single-wall carbon nanotubes in accordance with claim 43 wherein greater than 90% of the single-wall carbon nanotubes are of the armchair form.

45. A rope of single-wall carbon nanotubes in accordance with claim 42 wherein the ropes are produced by using solar energy to vaporize the carbon that forms the single-wall carbon nanotubes.

46. A felt, comprising single-wall carbon nanotubes.

47. The felt of claim 46, wherein the felt comprises about 30 - 100 wt. % single-wall carbon nanotubes.

48. The felt of claim 46, wherein said single-wall carbon nanotubes comprise ropes of single-wall nanotubes.

49. The felt of claim 48, wherein said felt is electrically conductive.

50. The felt of claim 49, wherein the size of said felt is 10 mm<sup>2</sup>, 100 mm<sup>2</sup>, or 1000 mm<sup>2</sup>.

51. The felt of claim 49, wherein the size of said felt is at least 10 mm<sup>2</sup>.

52. A buckypaper, comprising single-wall carbon nanotubes.

53. The buckypaper of claim 52, wherein the buckypaper comprises about 30 - 100 wt. % single-wall carbon nanotubes.

54. The buckypaper of claim 52, wherein said single-wall carbon nanotubes comprise ropes of single-wall nanotubes.

55. The buckypaper of claim 54, wherein said buckypaper is electrically conductive.

56. The buckypaper of claim 55, wherein the size of said buckypaper is 10 mm<sup>2</sup>, 100 mm<sup>2</sup>, or 1000 mm<sup>2</sup>.

57. The buckypaper of claim 55, wherein the size of said buckypaper is at least 10 mm<sup>2</sup>.